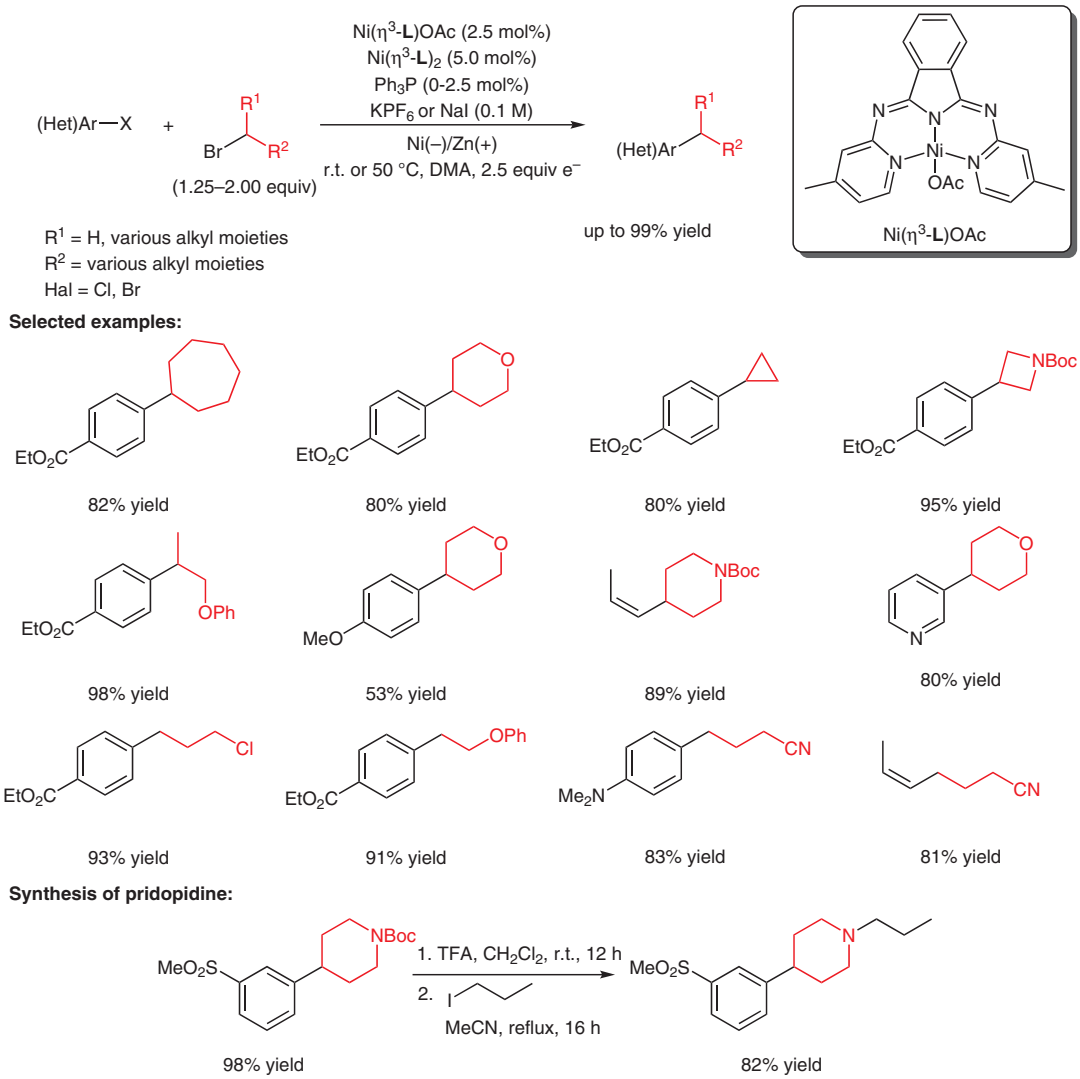
B. L. TRUESDELL, T. B. HAMBY, C. S. SEVOV* (THE OHIO STATE UNIVERSITY, COLUMBUS, USA)

General C(sp^2)–C(sp^3) Cross-Electrophile Coupling Reactions Enabled by Overcharge Protection of Homogeneous Electrocatalysts
J. Am. Chem. Soc. **2020**, *142*, 5884–5893.

Nickel-Catalyzed Cross-Electrophile Coupling using Electrochemistry



Significance: The authors describe a general nickel-catalyzed cross-electrophile coupling of functionalized alkenyl, aryl, and heteroaryl halides with various primary and secondary bromides using electrochemistry. The alkylated products were obtained in high yields.

Comment: Key for high coupling yields was the use of the electron shuttle reagent Ni(η^3-L)$_2$, which efficiently prevents over-reduction and thus decomposition of the unsaturated halides. Significantly, this enables an easy scale up by performing the reaction at high currents on a 75 mmol scale.

SYNFACTS Contributors: Paul Knochel, Ferdinand H. Lutter
Synfacts 2020, 16(06), 0661 Published online: 15.05.2020
DOI: 10.1055/s-0040-1706971; **Reg-No.:** P05320SF

© 2020. Thieme. All rights reserved.
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Category
Metals in Synthesis

Key words
electrochemistry
nickel catalysis
cross-electrophile coupling

Synfact of the Month

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.